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REMARKS

Claims 1-21 are pending in this application. By this amendment, Applicants amend claims 1, 11 and 21.

Claim 1 was rejected under 35 U.S.C. § 102(b) as being anticipated by Kobayashi (JP 52-50605). In addition, Claims 2-8 and 21 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kobayashi in view of Lopez (U.S. 5,132,647). And finally, claims 9-20 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kobayashi in view of Kato et al. (U.S. 5,140,497). Applicants respectfully traverse these rejections.

Claim 1 has been amended to recite:

"An input-output balanced filter comprising:

first and second input terminals and first and second output terminals;

a first LC filter circuit unit including a common side line, said first LC filter circuit unit being connected between said first input terminal and said first output terminal;

a second LC filter circuit unit including a common side line, said second LC filter circuit unit being connected between said second input terminal and said second output terminal;

a common line defined by an element that is independent of said first LC filter circuit unit and said second LC filter circuit unit;

wherein said common side line of said first LC filter circuit unit is electrically and directly connected to said common side line of said second LC filter circuit unit via said common line; and

an approximate midpoint of said common line is defined as a common phase reference point of each of said first and second LC filter circuit units." (Emphasis added)

Claims 11 and 21 recite features that are similar to the features recited in claim 1, including the emphasized features.

The input-output balanced filter according to the present claimed invention is a differential type filter for use in, for example, a balanced circuit, and has a filter function for a balanced signal and a transfer function for impedance of the balanced signal. Particularly, with the unique combination and arrangement of elements in the input-output balanced filter according to the present claimed invention, the balanced signal

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input between the first and second terminals is filtered and then subjected to impedance transformation by the common line defined by an element that is independent of the first and second LC filter circuit units so as to be output between the first and second output terminals.

The Examiner alleged that Kobayashi teaches all of the features recited in claims 1, all of the features recited in claim 11 except for a plurality of insulating layers and a plurality of conductive patterns of coils and capacitors, and all of the features recited in claim 21 except for a resonant circuit. Applicants respectfully disagree.

In contrast to the present claimed invention, Kobayashi teaches a first high-pass filter including elements C8, C9, L6, L7 and L8 and a second high-pass filter including elements C10, C11, L8, L9 and L10 (see Fig. A attached hereto). As described above, the inductor L8 of Kobayashi is an integral element of each of the first and second LC filter circuits, and is clearly NOT and CANNOT be fairly construed as an independent element. Thus, Kobayashi fails to teach or suggest "a common line defined by an element that is independent of said first LC filter circuit unit and said second LC filter circuit unit" (emphasis added) as recited in the present claimed invention.

In addition, the Examiner alleged that "since inductor L8 is normally made of uniform material, an approximate midpoint of the common line L8 is defined as a common phase reference point of each of the first and second LC filter circuit units (see Figure 5)." However, prior art rejections must be based on evidence. The Examiner has failed to cite any portion of Kobayashi which teaches or suggest anything at all about a common phase reference point. Fig. 5 of Kobayashi clearly does not teach or suggest any common phase reference point, and certainly fails to teach or suggest "an approximate midpoint of said common line is defined as a common phase reference point of each of said first and second LC filter circuit units" as recited in the present claimed invention.

Lopez et al. is relied upon merely to teach an LC parallel circuit which is a resonant circuit, and certainly fails to teach or suggest "a common line defined by an element that is independent of said first LC filter circuit unit and said second LC filter

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circuit unit," "said common side line of said first LC filter circuit unit is electrically and directly connected to said common side line of said second LC filter circuit unit via said common line" and "an approximate midpoint of said common line is defined as a common phase reference point of each of said first and second LC filter circuit units" as recited in the present claimed invention.

Kato et al. is relied upon merely to teach an LC parallel circuit having a layered unit structure, and certainly fails to teach or suggest "a common line defined by an element that is independent of said first LC filter circuit unit and said second LC filter circuit unit," "said common side line of said first LC filter circuit unit is electrically and directly connected to said common side line of said second LC filter circuit unit via said common line" and "an approximate midpoint of said common line is defined as a common phase reference point of each of said first and second LC filter circuit units" as recited in the present claimed invention.

Thus, Applicants respectfully submit that Lopez et al. and Kato et al. clearly fail to cure the deficiencies of Kobayashi described above.

Accordingly, Applicants respectfully submit that Kobayashi, Lopez et al. and Kato et al., applied alone or in combination, fail to teach or suggest the unique combination and arrangement of elements recited in claims 1, 11 and 21 of the present application.

In view of the foregoing remarks, Applicants respectfully submit that claims 1, 11 and 21 are allowable. Claims 2-10 and 12-20 depend upon claims 1 and 11, respectively, and are therefore allowable for at least the reasons that claims 1 and 11 are allowable.

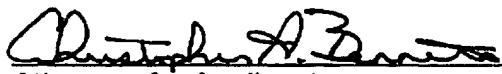
In view of the foregoing Amendment and Remarks, Applicants respectfully submit that this application is in condition for allowance. Favorable consideration and prompt allowance are respectfully solicited.

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The Commissioner is authorized to charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-1353.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

1. (Twice amended) An input-output balanced filter comprising:
first and second input terminals and first and second output terminals;
a first LC filter circuit unit including a common side line, said first LC filter circuit unit being connected between said first input terminal and said first output terminal;
a second LC filter circuit unit including a common side line, said second LC filter circuit unit being connected between said second input terminal and said second output terminal;
a common line defined by an element that is independent of said first LC filter circuit unit and said second LC filter circuit unit;
wherein said common side line of said first LC filter circuit unit is electrically and directly connected to said common side line of said second LC filter circuit unit via said common line; and
an approximate midpoint of said common line is defined as a common phase reference point of each of said first and second LC filter circuit units.

11. (Twice amended) An input-output balanced filter comprising:
a plurality of insulating layers;
first and second input terminals and first and second output terminals;
a first LC filter circuit unit connected between said first input terminal and said first output terminal and having a plurality of first coil conductive patterns, first capacitor conductive patterns and a common side line;
a second LC filter circuit unit connected between said second input terminal and said second output terminal and having a plurality of second coil conductive patterns, second capacitor conductive patterns and a common side line; and
a common line conductive pattern defined by an element that is independent of said first LC filter circuit unit and said second LC filter circuit unit;
wherein said common side line of said LC filter circuit unit is electrically and

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directly connected to said common side line of said second LC filter circuit unit via said common line conductive pattern; and

an approximate midpoint of said common line is defined as a common phase reference point of each of said first and second LC filter circuit units.

21. (Twice amended) An input-output balanced filter comprising:

a first LC bandpass filter circuit unit including a plurality of LC parallel resonant circuits electromagnetically connected to one another;

a second bandpass filter circuit unit including a plurality of LC parallel resonant circuits electromagnetically connected to one another;

an inductor defined by an element that is independent of said first LC filter circuit unit and said second LC filter circuit unit for electrically and directly connecting a common side line of the first LC bandpass filter circuit unit to a common side line of the second LC bandpass filter circuit unit;

first and second input terminals provided with one of the LC parallel resonant circuits of the first LC bandpass filter circuit unit and one of the LC parallel resonant circuits of the second LC bandpass filter circuit unit, respectively;

first and second output terminals provided with another of the LC parallel resonant circuits of the first LC bandpass filter circuit unit and another of the LC parallel resonant circuits of the second LC bandpass filter circuit unit, respectively; wherein

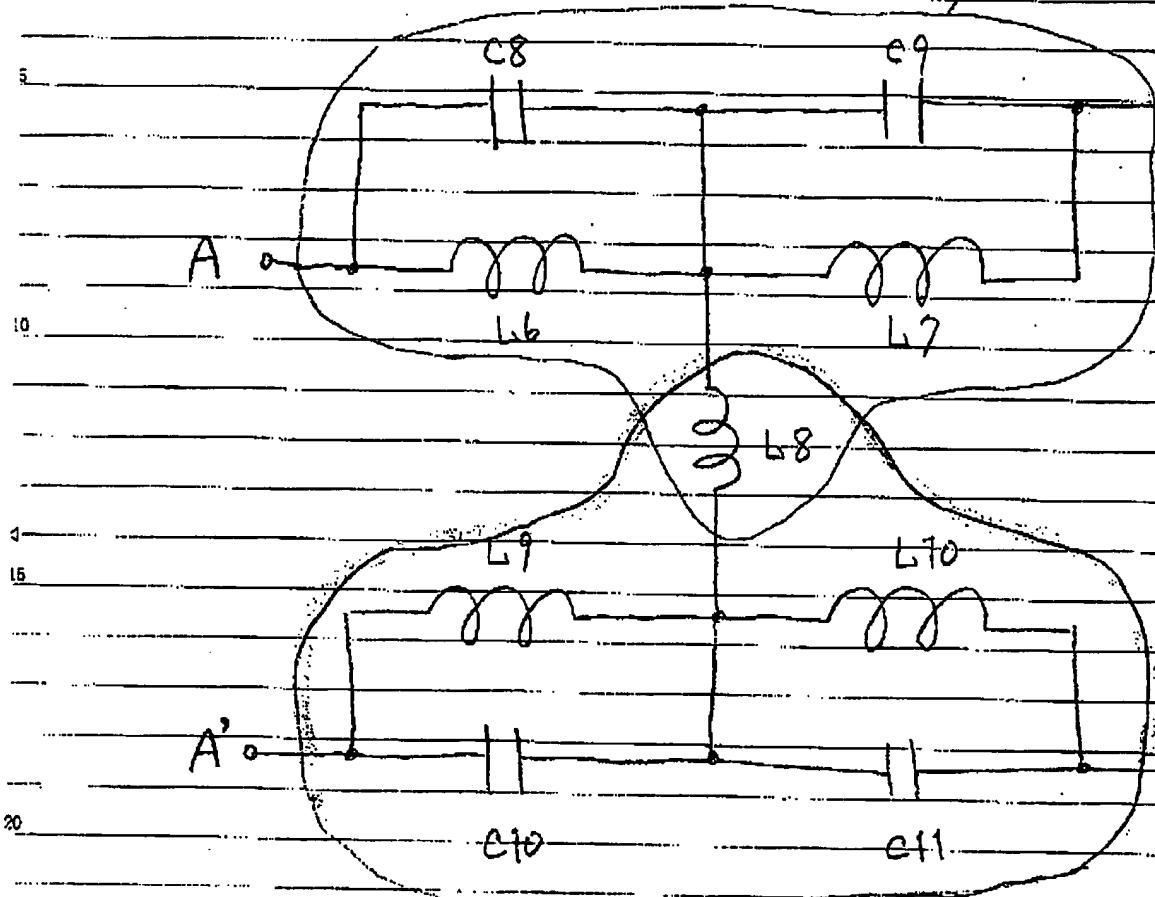
an approximate midpoint of the common line is defined as a common phase reference point of each of the first and second LC bandpass filter circuit units.

Murata

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Fig. A.

JP 52-50605 (Kobayashi) first High-Pass Filter



second High Pass Filter

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